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CLAIMS

What is claimed is:

10 [(New)] A process for the production of wear-resistant, coated surfaces with at least two electrodes connected to a voltage source which are disposed adjacent a reaction space through which an electrolyte flows in which the surface to be coated is located, the process comprising:

selectively reversing flow of the electrolyte at least once during the coating process for an amount of time as a function of the form of the surface of the workpiece before or during the coating process; and

thereby forming an oxide layer (Al_2O_3) on a surface selected from the group consisting of aluminum and an aluminum alloy.

11 [L(New)] The process according to claim 1, wherein the method comprises reversing flow based on precalculated flow times.

12. (New) The process according to claim 1, wherein the electrolyte flows in a certain direction is determined as a function of the form of the surface of the workpiece before the coating process.

13 **[(New)]** The process according to claim 10, wherein the method comprises coating a surface which is curved.

14. (New) The process according to claim 10, wherein the method comprises coating a

15 [New] The process according to claim 10, wherein the method comprises selectively reversing flow to develop different layer thicknesses on the surface to be coated.

17. ~~4~~(New) The process according to claim 10, wherein the method comprises disposing at least two connecting lines in communication with the working surface, where a first connecting line serves as the inlet and a second connecting line serves as the outlet for the electrolyte which can be transported with the aid of a feed line and at least two electrodes connected to a voltage source which are disposed in communication with the reaction space, and a change-over device for selectively reversing flow through the inlet and the outlet.

19. (New) A workpiece having defining a valve hole with a surface which is generally conical and an oxide coating with a distribution of layer thicknesses so that the coated surface has a cylindrical form.

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20 [New] An apparatus for the production of wear-resistant surfaces with a reaction space comprising to at least two connecting lines where a first connecting line serves as the inlet and a second connecting line serves as the outlet for an electrolyte which can be transported with the aid of a feed line and at least two electrodes connected to a voltage source which are disposed in communication with the reaction space, and a change-over device for selectively reversing flow through the inlet and the outlet.

21 [New] The apparatus according to claim 20 wherein at least one electrode is formed from a working surface to be coated, the working surface being selected from the group consisting of aluminum and an aluminum alloy.

22 [New] The apparatus according to claim 20, wherein the working surface is curved.

23 [New] The apparatus according to claim 22, wherein the working surface is cylindrical.

24 [New] The apparatus according to claim 23, wherein the working surface defines a plane.
